

# Environmental Health

## Washougal Compressor Station - Clark County, WA

### HEALTH CONSULTATION FINDINGS

### Introduction

A health consultation released by the Washington State Department of Health (DOH) in September 1999, determined that emissions from the Washougal compressor station in Clark County did not pose a health hazard to nearby residents. However, the consultation did recommend that other sources in the area be evaluated. In response to that recommendation, the Washington State Department of Ecology (Ecology) recently conducted computer modeling to evaluate emissions from other sources near the compressor station. This fact sheet summarizes each of those evaluations.

### Background

The Washougal compressor station is operated by the Northwest Pipeline Corporation and is located at 1309 NE Brown Road, north of Washougal. The compressor station was built in 1971 to move natural gas through a pipeline between gas fields in Canada and New Mexico. The compressor has a reciprocating engine and a turbine that produce emissions through exhaust stacks. A facility about 750 feet from the compressor station is also used to add a chemical, mercaptan, to the natural gas to give it its characteristic odor. In March 1999, the turbine stack height was increased from 60 to 84 feet and the reciprocating engine stack increased from 52.4 to 84 feet. (The higher stacks reduce the emissions impact to the community.)

Residents living near the station have expressed health concerns to various state and local agencies including Ecology and DOH.

### Air Emissions

To determine whether other fixed, not mobile, sources were contributing to air pollution near the compressor station, Ecology conducted air dispersion modeling. The modeling estimated impact of emission sources within 50 kilometers (31 miles) of the compressor station. Table 1 shows the modeling results.

Although outdoor air sampling has not been conducted at nearby residences, air modeling gives a reasonable "worst-case" estimate of outdoor air emission levels. The contaminants of concern are listed in Table 1.

Table 1	Washougal Compressor Station		All Sources <sup>a</sup>		Health Comparison Value <sup>b</sup>	
	1-hr/24-hr	Annual	24-hour	Annual	1-hour	Annual
Criteria Air Pollutants (ug/m <sup>3</sup> )						
Carbon monoxide	30.3/12.1	27.3 (8hr)	85.7	NA	40,100	10,300
Nitrogen oxides	42.0/16.9	3.4	16.8	3.3	470	100
Sulfur dioxide	17.2/6.9	0.1	18.3	3.4	1050	53
Particulate matter	NA	0.7	5.7	0.9	150(24hr)	50
Non-Criteria Air Pollutants (ug/m <sup>3</sup> )						
Formaldehyde	3.6/1.4	0.3	NA	NA	60	0.08
Benzene	NA	0.007	NA	NA	160	0.13
Mercury	NA	0.012	NA	NA	NA	0.2
Mercaptans	NA	NA	0.11 <sup>c</sup>	NA	700	1
Hydrogen sulfide	NA	NA	0.11 <sup>c</sup>	NA	700	1

a = Represents the combined impact at a point near the compressor station from all sources within 50 kilometers (31 miles).

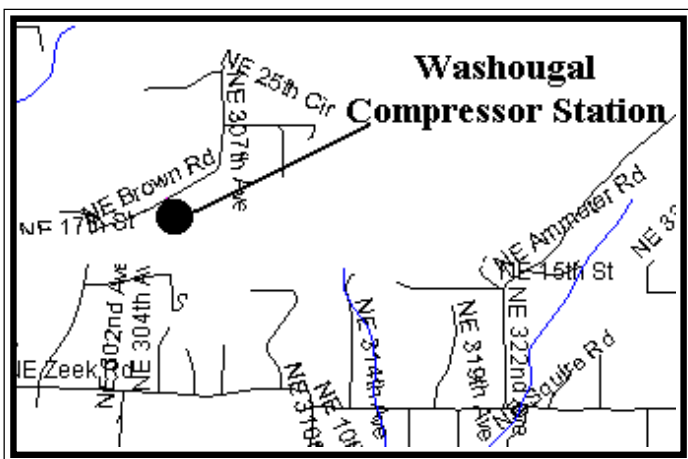
b = Health comparison values for the criteria air pollutants are derived from enforceable state and federal standards while comparison values for the non-criteria pollutants are taken from U.S. EPA and ATSDR.

c = Represents an estimate of total reduced sulfur (TRS) used as a surrogate for hydrogen sulfide and mercaptans.

NA = Not Available

Computer modeling results of the compressor station emissions showed that only formaldehyde exceeded its health comparison value. Emissions found at levels below health comparison values are not expected to cause harmful health effects. Those that exceed health comparison values need further evaluation. The emissions associated with sources other than the compressor station are minimal and do not exceed any health comparison values.

Since formaldehyde is considered to be a probable cancer causing chemical, a very low increase in cancer risk is attributed to formaldehyde exposure at these levels. And even though formaldehyde is a respiratory irritant, estimated levels are not high enough to cause that type of health effect. It is also important to keep in mind that formaldehyde is everywhere (in outdoor and indoor air). The estimated levels of formaldehyde coming from the compressor station are similar or below background levels found throughout the United States.



**No apparent public health hazard exists** from past, current or future exposure to emissions from the Washougal Compressor Station or other nearby sources. Therefore, emissions from those sources are not expected to cause harmful health effects to residents living near the compressor station.

It is possible that some individuals living near the station, with existing respiratory problems, could experience harmful respiratory effects due to combined exposure from both indoor and outdoor sources of air emissions. Indoor combustion sources: wood stoves and fireplaces, furnaces, space heaters, gas stoves/ovens, gas water heaters and tobacco smoke contribute many of the same air emissions as outdoor sources. Good exhaust for indoor combustion sources along with good ventilation is always needed to maintain a healthy indoor environment.

If residents continue to feel that their health is being impacted by compressor station emissions, please call Rob Duff toll free at the number below or 360-236-3371.

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